

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Ang et al.

Serial No.: 10/723,784

Filed: November 26, 2003

For: Carbonate-based Anti-caking Agent with Reduced Gas Release  
Properties

Examiner: Leslie Wong

Group Art Unit: 1761

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §41.37**

Mail Stop Appeal Brief  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. §41.37,  
Appellants submit the following:

**REAL PARTY IN INTEREST**

International Fiber Corporation, North Tonawanda, New York,  
is the real party in interest.

**RELATED APPEALS AND INTERFERENCES**

There are no pending appeals or interferences related to  
this application.

**STATUS OF CLAIMS**

Claims 1-12 and 18-32 are pending in the application.

#### **STATUS OF CLAIMS**

Claims 1-12 and 18-32 are pending in the application.

Claims 1-12 and 18-32 stand finally rejected.

Claims 1-12 and 18-32 are offered for appeal.

#### **STATUS OF AMENDMENTS**

No amendments have been made subsequent to final rejection.

#### **SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention provides carbonate-based metal anti-caking agents with reduced gassing properties. The reduced gassing property is important because the application of calcium carbonate and other carbonate-based anti-caking agents is problematic for foods that contain relatively high moisture (higher than 30%) such as cheese. In addition foods that have a pH lower than neutral 7 pose a severe challenge to the application of carbonates because carbonates are relatively unstable in an acidic environment. When exposed to acids or acidic environments, a large amount of the metal carbonate can dissociate into carbonic acid, and in turn, the carbonic acid can be converted to carbon dioxide. Even though some of this carbon dioxide can dissolve within the water contained within the food, excess production of carbon dioxide in a package, especially at the beginning of storage, can result in a significant increase in the volume of the headspace within a package.

The anti-caking agent of the present invention includes metal carbonates and an encapsulating agent. The method of

preparing this anti-caking agent includes encapsulating the metal carbonates with the encapsulating agent, which provides an efficient barrier to prevent the contact of the carbonate-based salt with the outside environment.

Independent Claim 1 is described on page 7, line 25 through page 8, line 30 and Example 2, page 13, line 26 through page 15, line 18, of the specification as originally filed.

Independent Claim 12 is described on page 11, line 10 through page 12, line 30 and Example 2, page 13, line 26 through page 15, line 18, of the specification as originally filed.

Independent Claim 18 is described in Example 2, page 13, line 26 through page 15, line 18 of the specification as originally filed.

#### **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether Claims 1-12, and 18-32 should be rejected under 35 U.S.C. 103(a) as being unpatentable over Gimmler et al. (U.S. 5,925,387) in view of Applicant's disclosure?

#### **ARGUMENTS**

##### **Ground 1:**

Gimmler et al. teaches a powdery anti-stick agent comprising calcium carbonate coated with wax for use with chewing gum. Chewing gum is a very different type of product than high moisture content products such as cheese, to which the present invention pertains. Chewing gum is a dry product with typical moisture of less than 5%. The calcium carbonate is coated with wax to improve the "mouth feel" and taste of the calcium carbonate which clashes with the dry chewing gum. Gimmler has nothing to do with high moisture content foods or

the prevention of gas formation.

There is no teaching or suggestion in Gimmler to combine the wax coated calcium carbonate with a high moisture content product such as cheese. The motivation for improving the "mouth feel" and taste of the calcium carbonate for use with chewing gum does not apply to high moisture content foods because the high moisture content hydrates the calcium carbonate so the user would not taste or feel it. Accordingly, wax coating of calcium carbonate would not serve the purpose disclosed in Gimmler if applied to the instant invention and therefore Gimmler does not teach or suggest the Applicant's invention. Furthermore, there is no teaching or suggestion in Gimmler that combining wax and calcium carbonate would be effective in a high moisture content food.

Applicant's disclosure states that, "although the applications of calcium carbonate and other carbonate-based anti-caking agents are acceptable in foods that are relatively dry (moisture content less than 5-10%), a severe problem is encountered when they are applied to foods that contain relatively high moisture (higher than 30%), such as cheese." Page 1, lines 24-29. The problem is gas formation and "there is a need to minimize or control and delay the release of carbon dioxide into the headspace of a package when metal carbonate is used in foods that are relatively moist." Page 2, lines 15-19. Accordingly, Applicant's disclosure teaches that carbonate is used for anticaking in dry foods. This information does not add anything to Gimmler because Gimmler already knew that carbonates were used for anti-sticking in dry foods. To contrast, the present invention solves the problem of excess gas formation when carbonates are used for anti-caking in high moisture

**Conclusion**

The Board is respectfully requested to overturn the rejections of record, and to find that Claims 1-12, and 18-32 define patentable subject matter over the art of record. Please charge any fees due to Deposit Account No. 08-2442.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David L. Principe", written over a horizontal line.

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**CLAIMS APPENDIX**

Claims 1-12 and 18-32 on appeal:

1(Previously presented). A food composition comprising:

a perishable solid food material; and,

an anti-caking composition dispersed in or on the perishable food material, the anti-caking composition having a carbonate-based core material encapsulated by a hydrophobic material, wherein the food material has a moisture content greater than 20%.

2(Original). The food composition of Claim 1, wherein the carbonate-based core material comprises calcium carbonate, sodium carbonate, magnesium carbonate, potassium carbonate, alkaline earth metal carbonate, ammonium carbonate, sodium bicarbonate, ammonium bicarbonate or combinations thereof.

3(Original). The food composition of Claim 1, wherein the hydrophobic material comprises lecithin, oil soluble colors, mineral oil, vegetable oil, hydrogenated vegetable oil, wax or animal fat.

4(Original). The food composition of Claim 1, wherein the anti-caking composition is provided in an amount of from about 0.5% to 6% by weight of the food composition.

5(Original). The food composition of Claim 1, wherein the food material has a moisture content greater than 30%.

6(Original). The food composition of Claim 1, wherein the food material has a pH lower than 7.0.

7(Original). The food composition of Claim 1, wherein the carbonate-based core material has a mean particle size of about 20 micron.

8(Original). The food composition of Claim 1, wherein the hydrophobic material is provided in an amount of from about 1-20% by weight of the anti-caking composition.

9(Original). The food composition of Claim 1, wherein the hydrophobic material is provided in an amount of from about 20-50% by weight of the anti-caking composition.

10(Original). The food composition of Claim 1, wherein the anti-caking composition is combined with an anti-caking material in a ratio of about 1:1.

11(Original). The food composition of Claim 1, wherein the food material is cheese.

12(Original). A food composition comprising:

a perishable solid food material having a moisture content of at least 30% and having a pH less than 7; and,

an anti-caking composition dispersed in or on the perishable food material, the anti-caking composition having a carbonate-based core material encapsulated by a hydrophobic material.

18(Previously presented). A method for making a food composition comprising the steps of:

- a. providing a carbonate-based core material;
- b. providing a hydrophobic material; and
- c. encapsulating the carbonate-based core material with the hydrophobic material to obtain an encapsulated carbonate-based material wherein the rate of carbon dioxide formation from the encapsulated carbonate-based material upon exposure to moisture is less than the rate of carbon dioxide formation from the carbonate-based material before encapsulation, upon exposure to moisture; and
- d. dispersing the encapsulated carbonate-based material in a food material having a moisture content greater than 20%.

19(Original). The method of claim 18, wherein the carbonate-based core material comprises calcium carbonate, sodium carbonate, magnesium carbonate, potassium carbonate, alkaline earth metal carbonate, ammonium carbonate, sodium bicarbonate, ammonium bicarbonate or combinations thereof.

20(Original). The method of claim 18, wherein the carbonate-based core material has a mean particle size greater than 0.2 microns.

21(Original). The method of claim 18 wherein the carbonate-based core material has a mean particle size of 5 to 100 microns.

22(Original). The method of claim 18, wherein the hydrophobic coating material comprises lecithin, oil soluble colors, mineral



oil, vegetable oil, hydrogenated vegetable oil, wax or animal fat.

23(Original). The method of claim 18, wherein the hydrophobic coating material comprises about 0.01% to about 50% by weight of anti-caking agent.

24(Original). The method of claim 18, wherein the hydrophobic coating material comprises about 1% to about 20% by weight of anti-caking agent.

25(Original). The method of claim 18, wherein when the hydrophobic coating material is solid at room temperature, the hydrophobic coating material comprises at least 0.1% by weight of the anti-caking agent.

26(Original). The method of claim 18, wherein the hydrophobic coating material is solid at room temperature and the hydrophobic coating material comprises from about 0.5% to about 50% by weight of the anti-caking agent.

27(Original). The method of claim 18, wherein the hydrophobic coating material is solid at room temperature and the hydrophobic coating material comprises at from about 20% to about 50% by weight of the anti-caking agent.

28(Original). The method of claim 18, wherein the carbonate-based core material is encapsulated by the hydrophobic material by atomizing the hydrophobic material onto the carbonate-based core material.

29(Original). The method of claim 18, wherein the carbonate-based core material is encapsulated by the hydrophobic material by spraying the hydrophobic material onto the carbonate-based core material.

30(Original). The method of claim 18, wherein the carbonate-based core material is encapsulated by the hydrophobic material by a fluid bed.

31(Original). The method of claim 18, wherein the carbonate-based core material is encapsulated by the hydrophobic material by heating and blending the hydrophobic material with the carbonate-based core material.

32(Original). The method of claim 18, wherein the carbonate-based core material is encapsulated by the hydrophobic material by spray chilling the hydrophobic material onto the carbonate-based core material.

**EVIDENCE APPENDIX**

**None.**

**RELATED PROCEEDINGS APPENDIX**

**Not applicable.**

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